City of Quincy
Proposed Hydro Electric Project

Reg Ankrom submitted the following Questions after the August 17, 2009 public meeting concerning the proposed Hydro electric project. City staff and Klingner and Associated provided answers to the questions.

Questions and Answers

1. Please provide a brief narrative on the history of the hydroelectric project, including the benefits and risks you have considered.

   Response:
   This was covered in the public meeting hosted by the City Council on Monday, August 17.

2. When does the plan anticipate the hydroelectric plant to begin commercially generating electricity?

   Response:
   The date for generation available to the grid varies with different development scenarios. The original project plan called for power production in 2016. If an expedited licensing process is arranged, production could begin in 2012 or 2013.

3. What is the MW capacity of the hydroelectric plant?

   Response:
   - 15 MW of capacity is proposed for Lock and Dam No. 21
   - 2 MW of capacity is proposed for Lock and Dam No. 22
   - Estimates of capacity are still being developed for Lock and Dam Nos. 24 and 25

   a. Will the capacity serve Quincy proper's projected electric demand and consumption?

      Response:
      The City of Quincy does not operate a municipal utility and is therefore not responsible for procuring power to meet the electricity demand and consumption of its residents and industry. At this time, the City of Quincy does not intend to develop a municipal utility and therefore the projected electric demand of the residents and industry of Quincy are not relevant to the hydroelectric project.

   b. Have we done an analysis of the city's load growth to determine adequacy of the capacity to serve into the future?

      Response:
      See response to question 3.a.

4. What is the anticipated all-in cost when completed?

Response:

The City has expended approximately $1.2 million dollars on the project thus far. Future expenditures for the licensing and construction of Lock and Dam No. 21 are estimated at $81,638,765 and $14,250,000 for Lock and Dam No. 22. Construction estimates have not been developed for Lock and Dam Nos. 24 and 25 because the feasibility studies have not been completed.

5. What other options for power acquisition were considered?

Response:

It is assumed that this question refers to the development of a municipal utility that would procure power on the behalf of its customers. At this time, the City of Quincy is not a municipal utility and has not made plans to form a municipal utility and is therefore not responsible for power procurement.

6. Please quantify the cost per kilowatt of each option considered.

Response:

Refer to question 5. Because Quincy is currently considering becoming a municipal utility, options for procuring power have not been analyzed.

7. Please briefly explain why each of the other options was rejected.

Response:

Not applicable, see questions 5 and 6.

8. Was the purchase of wholesale power considered?

Response:

It is assumed that this question also refers to the development of a municipal utility that purchases wholesale power for use by its customers. The City is not currently pursuing a municipal utility and has therefore not considered purchasing wholesale power.

a. What advantages and disadvantages were projected?

Response:

Not applicable, see question 8.

9. Have we considered rate structures at this point?

Response:

It is assumed that this question also refers to the development of a municipal utility that purchases wholesale power for resale to its customers and the reference to rate structure refers to the rate structure paid by the customers. The City of Quincy is not currently pursuing the option of becoming a municipal utility and therefore rate structures have not been considered.

10. Please ballpark the estimated cost per kilowatthour for a residential customer at retail.

Response:

As the City of Quincy is not currently pursuing a municipal utility, the City will not have control on the retail cost of power for a residential customer.

a. How does that compare to projected kilowatthour charge from existing power generation sources?

Response:

Not applicable, see question 10.

11. Is there a plan for possible expansion of the plant?

Response:

The project at Lock and Dam No. 21 is considered to be "full development" of the site. River flows and effects on the environment and navigation must be considered when designing hydroelectric facilities and the project team feels that the size of the project has been optimized to maximize electrical generation while minimizing impact of the facilities on the existing conditions. With this said, expansion is unlikely but it could be possible in the future. Future expansion would require a new license application.

The project at Lock and Dam No. 22 originally consisted of 30 generating units but has been reduced to 4 generating units. Future expansion is possible but would face the same environmental and navigation challenges that forced the original reduction in size. Future expansion of the project would require a new license application.

a. Is that built into the project?

Response:

Project expansion has not been built into the project.

12. Considering age and possible future replacement of the dams, how would that impact construction and operation of hydroelectric facilities?

Response:

The hydroelectric licensing process is regulated by the Federal Energy Regulatory Commission (FERC) and typical licenses are issued for 50 years. Consultation with federal and state regulatory agencies (including the US Army Corps of Engineers (USACE) who controls the Lock and Dams) is required in order to receive a FERC license. The proposed development of the hydroelectric facility must not infringe on any of the USACE's future plans for the Lock and Dam or a license will not be issued (one reason for the reduction in size of the project at Lock and Dam No. 22). The project team has been working very closely with the USACE to insure that that no conflicts between the proposed hydroelectric facilities and any proposed improvements to the Lock and Dams are created.

13. Does the manufacturer of the generation equipment have other generating facilities by which performance and reliability can be reviewed?

Response:

The manufacturer currently has three generating facilities in operation in France. Mike Klingner of Klingner & Associates, P.C. and Jim Borg of Mead & Hunt, Inc have visited two of these locations. Tests and analysis of performance and reliability have been ongoing at these facilities and have been reviewed by the project team.

14. Has discussion begun on who would build the facilities?

Response:

As the projects are two to four years away from construction, formal conversations with a contractor have not been initiated at this time. General information about what will be expected from the contractor is discussed below.

a. What qualifications do we anticipate will be required?

Response:

The selected contractor will need to show experience with marine construction. This could be some or all of the following: Dredging, dam construction, hydroelectric project construction, bridge and docking facilities. Equipment suppliers will need to demonstrate similar projects, or documentation with extensive testing that shows their equipment is appropriate for the Quincy installation.

b. What will be required in the way of performance guarantees?

Response:

It is expected that a contract will be executed with the selected contractor and equipment suppliers that contains liquidated damages for schedule completion and output. Additionally a contract with the turbine/generator supplier will be pursued that includes a water-to-wire delivery of electricity at a specific gross head. Typical performance guarantees are in affect for 12 months.

c. What indemnification will be required?

Response:

The City and the USACE should be named as additional insured and indemnified by the selected contractor.

15. What is the expected life of the plant for purposes of both depreciation and retirement or replacement?

Response:

A conservative estimate of depreciation and replacement of the units would occur over 40 to 50 years.

16. What is the financial structure of the project (i.e., ownership, debt-equity ratio, etc.)?

Response:

The financial structure of the project has not been finalized at this point in time. All options are essentially on the table and the City of Quincy could maintain

100% ownership or could share the ownership with another municipality, electrical cooperative, or investor owned utility. Further refinement of the potential ownership options and the corresponding debt-equity structures will be analyzed as the project moves forward.

17. If the project is to be financed solely by debt instruments, what are the anticipated terms and conditions?

Response:

Referring to question 16, the financial structure of the project has not been finalized at this point in time. However, when a permanent financial lender is determined, some of the anticipated terms and conditions could include 40 year debt amortization, A rated credit, warranties from constructors and manufacturers, and reserves for debt service and O&M.

18. Will these be revenue or general obligation bonds or a combination of each?

Response:

General obligation bonds will be used to fund the work required to obtain a license (approximately $10.2 million). After licenses are received, the bonds will be rolled into the construction financing which will consist of revenue bonds. General obligation bonds will not be used to fund the construction of the projects.

19. If a combination, what percentage is expected to be general obligation bonds?

Response:

See question 18

20. When will debt service on bonds begin?

Response:

Debt service would begin with the commercial production of electricity. See question 2 for information on the date of commercial production.

21. If debt service begins before commercial operation begins, how will payment be made?

Response:

See question 20

22. What impact, if any, will issuance of these bonds have on the city's ability to bond by revenue and general obligation for other needs in the future?

Response: Quincy as a home rule unit of government has authority to issue bonds and does not have a statutory debt limit. The city ability to bond is based on its bond rating. The city bond rating is impacted by debt as well a variety of other factors. As part of the bond issue for the environmental work to obtain FERC license ($10.2 million GOB) and the $200 million revenue bond for construction, the city had Standard and Poor's evaluate our bond rating. S and P reported Quincy bond rating of A+.

23. Are we assured that we will have enough bonding authority to see the project fully through?

    Response: Yes. As mentioned in the response to questions 22, the city did evaluate both the general obligation bond issue and the construction revenue bond issue in terms of bond capacity and the city has the ability and capacity to issue the bonds. However, the actual amount of the bond issuance depends on City Council authorization.

24. May we see the list of grants, loans and other instruments expected to help with the cost of the project?

    Response:

    Many avenues are available to help reduce the cost of the project. The following list is not meant to be all inclusive but is representative of the possibilities that may exist.

    - Municipal bond issuance
    - Clean Renewable Energy Bonds
    - Loan guarantees through the Illinois Finance Authority
    - Illinois Clean Energy Foundation
    - Planning Assistance to States Program
    - Congressionally Directed Project
    - Sate of Illinois appropriations
    - Illinois Department of Commerce and Economic Opportunity (responsible for disbursement of stimulus funds for renewable energy in Illinois)
    - Production and investment tax credits
    - Natural Resources Canada
    - Transform Missouri Program
    - Build America Bonds
    - Various Department of Energy grant programs for renewable energy
    - New market tax credits

25. What assurances do we have that these have been encumbered or will be available when needed for the project?

    Response:

    Several of the programs described are a result of the stimulus package and currently have an expiration date of 2011. There is no guarantee that these programs will continue past this date and this is one of the reasons for the desire to expedite the licensing process. Work has been ongoing to secure grants and other instruments to help with the financing costs and work will continue to secure as many financing aids as possible as early as possible.

26. What do we see as the risks of each?

    Response:

    Grants and other methods used to defray the cost of the project are not a risk, but rather a method of reducing risk.

27. May we see the business plan for the project, including:

a. Business model
b. Financials and pro forma
c. Risk analyses
d. Project and payment schedule and related cash flow requirement.
    i. What revenue sources will be used for payments?

Response: A specific business plan for the hydro project has not been prepared. As part of the bond issue the city will consult with a financial expert to analyze different development scenarios and economic variables that will influence the projects as it relates to the construction bond financing. Factors to be considered include grant opportunities in renewable energy, partnership opportunities with energy providers and cooperatives or joint ventures with private investors. Each factor needs to be weighed against the public interest and benefit. Other variables to be considered include interest rates on revenue bonds, long term bond financing incentives for municipal governments and the kwh cost of electricity.

28. Do we have a plan by which we continue to measure cost-benefit during the course of the project?

Response:

The project team has updated the feasibility of the project on an annual basis since the beginning of the project. As work has intensified, the project team has recommended providing project updates every 6 months. Cost benefit has been an important aspect of every feasibility update and will continue to be included in all updates in the future.

a. Do we have an exit strategy if required at various points along the way?

Response: The City Council can seek updates from both staff and the hydro consultant team whenever they deem it necessary. It is expected the Quincy City Council will be given updates every 6 months or sooner if necessary. It also expected the City Council will receive updates reports from the City staff and consultant on grants applications which will require City Council authorization before submission.

29. Who are the parties said to be interested in:

Response:

Various entities have expressed varying combinations of interest in acquiring the license, partnerships and purchasing power. These entities have included investor owned utilities, electrical cooperatives, and independent power producers. These entities include:

- Missouri Public Utility Alliance
- Illinois Municipal Electric Agency
- MidAmerican Energy
- Kansas City Power & Light

- Prairie Power/Adams Electric
- Constellation New Energy
- Missouri Wind Resources
- Associated Electric Cooperative/ Northeast Power
- Ameren Illinois Utilities
- Ameren UE
- Hannibal Board of Public Works
- Marion County Drainage District
- AES Corporation

a. The license
b. Partnership (or joint venture, etc.)
c. Purchases of power

30. Would any of these parties be interested in an equity position?

Response:
Interest in an equity position has been received from various entities listed in the response to question 29.

a. Would a partnership or joint venture with those expressing interest in ownership make sense?

Response:
Northland Securities is currently analyzing various development scenarios including partnerships and joint ventures. The results of Northland Securities' study will be used to determine whether a partnership or joint venture is in the best interest of the City of Quincy.

i. Assuming some of the interested parties are utilities, would they be willing to assist in due diligence on the project?

Response:
It is expected that any partner or entity involved in a joint venture with the City of Quincy on the project would expect to perform their own due diligence on the project, however, because the City has not determined if a partnership will be utilized, it would be premature for an outside entity to perform due diligence on the project.

31. The Klingner engineering firm is providing strong expertise in hydraulics of the project. Who is providing the electrical expertise?

Response:
- Technical electrical design services have been provided on the project by Mead & Hunt, Inc and Sargent & Lundy, LLC.
- Wholesale power pricing research has been provided by SPI Energy Group
- Pete Pohlman of GREDF has also served in advisory role to the project lending his experience from a career in the electrical utility industry

a. What are that firm's qualifications?

Response:

- Both Mead & Hunt and Sargent & Lundy have extensive electrical design experience and a thorough explanation of their qualification is given on their respective websites:

  http://www.sargentlundy.com/
  http://www.meadhunt.com/

- SPI Energy Group consists of electric utility professionals with extensive experience in the electrical utility industry and provides consultation to municipalities in the areas of pricing strategies, regulation, utility costing, contracts, and service options.
- Pete Pohlman has worked as an energy consultant for GREDF for the past xx years. Prior to working for GREDF Mr Pohlman worked in the electric utility industry for xx years.

b. Who is serving as the city's owner's representative for the project?
   i. What are this person's qualifications?
   ii. Would it make sense for the Mayor to appoint an advisory committee of experts for the conduct of the project?

32. Does the contract with Klingner Engineering define its advisory role?
    a. What does advisory mean?
       i. Does it include policy recommendations?
       ii. Is it at arms-length enough not to "drive" the project?
       iii. How is accountability provided?

33. If private parties are interested in participating in the project, does it make sense to determine the extent to which they are interested?

    Response:

    After a more thorough study of the financial aspects of the project, which the City can use to gain a keep understanding of the risks involved with various development scenarios, the City can decide which development scenario (sole owner, public partner, private partner, etc) they wish to pursue. If the City decides to pursue a private partner, the City, through a competitive process, can choose the option that best benefits the City.

    a. Would they be willing to buy the project from the city and commit to completing it?

    Response:

    The City has received interest in acquiring the license from the City as well as interest in becoming an equity partner.

    b. Would it be beneficial to have them share the risk?

    Response:

Depending on the financial economics of the project, it may be beneficial to share the risk but it is too early in the financial analysis process for this to be concluded.

c. Would a public utility like Ameren Energy, required to have a percentage of green in its generation portfolio in the near future, be interested in a joint venture or partnership?

Response:

Investor owned utilities such as Ameren have shown an interest in participating in the project. Interest has also been received from other municipal governments and electrical cooperatives. See question 29.

d. If parties include existing electric utilities, would it make sense to include them in a relationship to take advantage of their expertise in power production?

Response:

It is expected that when and if outside entities are invited to submit a proposal to participate in the project via partnership or power purchase agreements, they will expect and will be allowed to perform due diligence on the project. However, because the City has not completed its own due diligence, and has not determined the method of development, it would be premature to enter into a relationship with an outside entity that has an interest in a future partnership.

34. One speaker at the August 17 meeting noted factory closings had resulted in large amounts of electric supply, which has lowered wholesale electric prices. Are there opportunities for long-term power purchase agreements for this available supply?

35. When Mead-Hunt representatives indicated an interconnection study showed no problem in transporting electricity from the hydroelectric facilities, did the study include transmission, transformation and distribution systems?

Response:

The interconnection study was performed by Sargent & Lundy and matched the scope of a typical Midwest Independent System Operator feasibility study. The study analyzed transmission facilities rated at 69 kV and above that are within five busses of the interconnection location. The study analyzed both normal operating conditions and single contingencies.

36. Mr. Pohlman reported the GREDF study indicated positive cash flows. When?

Response:

Cash flow from the project is dependent on several different variables including but not limited to the cost of financing, wholesale power values, construction costs, electrical production rates, and the amount of grants received. Depending on what combination of variables are considered, positive cash flow could be realized in year one, or it could never be realized.

37. With a mandate for Illinois's electric generation to have more green power, what reason did the Illinois Power Authority provide for not being interested in participating in the hydroelectric project?

Response:

The Illinois Power Authority has not made any references or statements regarding a non-interest in power from the hydroelectric project. In fact, the City of Quincy has been contacted by the Illinois Finance Authority who is working in conjunction with the Illinois Power Agency to provide reduced interest financing for renewable energy projects, and the City has been asked to provide detailed information on the hydroelectric project for consideration.

38. Why was work suspended on Lock and Dam 20?

Response:

Lock and Dam No. 20 differs from Lock and Dam Nos. 21 and 22 in that it does not have an overflow spillway. Therefore, the turbine-generator units would have had to be installed behind the spillway gates and a method of moving the turbine-generators above the 500-year flood level during high flow events would be required. The added cost of complexity and equipment at Lock and Dam No. 20 made the construction costs too high to justify a project at this location. Therefore, the project team recommended in its May 2009 update that work be suspended at Lock and Dam No. 20.

39. Are the turbine generators that Mr. Klingner reviewed in France full-scale commercial generators?

Response:

The turbine-generators reviewed by Mr. Klingner are full-scale commercial turbine-generators and are currently providing power to the French electrical grid.

40. With apparent issues at Lock and Dam 22, why place a minimal number of generators there?

Response:

The project at Lock and Dam No. 22 was reduced in size to alleviate the USACE concerns regarding impact on the proposed fish passage and the current navigation challenges at this location. However, because the USACE has been planning a fish passage at this location, significant environmental and navigation information already exists (including a physical hydraulic model) and can be used in the development of hydroelectric facilities. The ability to use existing information shortens the study time necessary and could contribute to an expedited licensing timeframe for the project. The project team recommended the development of Lock and Dam No. 22 only if significant grant funding is available and the most likely source of significant grant funding is the renewable energy grant funding made available in the stimulus package which requires construction to begin in 2011. An expedited licensing process is necessary to meet this deadline and the project team felt that the project at Lock and Dam No. 22 is the best candidate for the expedited licensing process. Additionally, even though the proposed project scale has been reduced, the project can still be a revenue generator for the City of Quincy.

a. Is this a feasibility demonstration?

Response:

The project at Lock and Dam No. 22 is not intended to be a feasibility demonstration. The feasibility of the generating units has already been proved in France.

b. If so, who is funding?

Response:

Not applicable, see question 40.a

41. What is the plan to pay off bonds for this second phase if the project proceeds no further?

42. If Mr. Klingner's timeline for studies, grants, etc., will take up to six months, what is the urgency for moving so quickly on the bond authorization?

Response:

Proceeds from the bond issuance will be used to pay for the environmental, financial, engineering, and grant applications. Without a bond issuance, work on the project will not move forward.

a. What impact will a month's postponement have?

Response:

As stated above, the bond issuance is necessary in order for work to continue on the project. Environmental sub-consultants have scheduled work to take place in August and September with the anticipation that the bond issuance will be authorized. If the bond authorization is postponed a month, the current work hold will have to continue and the environmental studies will not occur. Some of the scheduled environmental studies are seasonal and can only be performed during certain periods of the year and a one month postponement could have the effect of delaying these studies for an entire year.

Additionally, grants and other opportunities made available through the stimulus have strict time limitations on both the application and the start date of construction. A missed application deadline due to a work hold or a delay in the start of construction due to a delay in environmental studies could severely limit the ability of the City to receive grants for the project.

43. Mr. Pohlman stated if he knew in 2006 what he knows today, he would not have proceeded with the hydroelectric recommendation. What does he mean?